PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:	Confirmation No.: 4382
Seppo HUOTARI et al.	Art Unit: 2619
Application No.: 10/736,851	Examiner: Salman AHMED
Filed: December 17, 2003	Attorney Dkt. No.: 060282.00146

For: ROAMING FROM IMS DOMAIN TO THE CS DOMAIN

CLAIM FOR PRIORITY UNDER 35 USC § 119

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

August 27, 2008

Sir:

The benefit of the filing dates of the following prior foreign application(s) filed in the following foreign country(ies) is hereby requested for the above-identified patent application and the priority provided in 35 U.S.C. §119 is hereby claimed:

PCT International Application No. PCT/EP2001/06844 filed on June 18, 2001 in Europe

In support of this claim, certified copy(ies) of said original foreign application(s) is/are filed herewith.

It is requested that the file of this application be marked to indicate that the requirements of 35 U.S.C. §119 have been fulfilled and that the Patent and Trademark Office kindly acknowledge receipt of these/this document(s).

Please charge any fee deficiency or credit any overpayment with respect to this paper to Counsel's Deposit Account No. 50-2222.

Respectfully submitted,

David D. Nelson
Registration No. 47,818

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Vienna, Virginia 22182-6212
Telephone: 703-720-7800
Fax: 703-720-7802

DDN:sjm

Enclosure: Priority Document (1)

Europäisches Patentamt

European Patent Office

Office européen des brevets

Bescheinigung

Die angehefteten Unterlagen stimmen mit der ursprünglich eingereichten Fassung der auf dem nächsten Blatt bezeichneten internationalen Patentanmeldung überein.

Certificate

The attached documents are exact copies of the international patent application described on the following page, as originally filed

Attestation

Les documents fixés à cette attestation sont conformes à la version initialement déposée de la demande de brevet internationale spécifiée à la page suivante.

Den Haag, den
The Hague,
La Haye, le 11.08.2008

Der Präsident des Europäischen Patentamts, i.A.
For the President of the European Patent Office
Le Président de l'Office européen des brevets, p.o.

EUROPÄISCHES PATENTAMT – EUROPEAN PATENT OFFICE – OFFICE EUROPÉEN DES BREVETS – DEN HAAG – THE HAGUE – LA HAYE 118

BRYNER, Yocline

Patentanmeldung Nr.
Patent application no. PCT/EP 2001/06844
Demande de brevet n°

Blatt 2 der Bescheinigung
Sheet 2 of the certificate
Page 2 de l'attestation

Anmeldenummer :
Application no. : PCT/EP 2001/06844
Demande n° :

Anmelder : 1. NOKIA CORPORATION - Espoo, Finland
Applicant(s) : 2. HUOTARI, Seppo - Espoo, Finland (US only)
Demandeur(s) : 3. TUOHINO, Markku - Espoo, Finland (US only)

Bezeichnung der Erfindung :
Title of the invention : Roaming from IMS Domain to the CS Domain
Titre d'invention :

Anmeldetag :
Date of filing : 18 June 2001 (18.06.2001)
Date de dépôt :

In Anspruch genommene Priorität(en) :
Priority(ies) claimed :
Priorité(s) revendiquée(s) :

Benennung von Vertragsstaaten : Siehe Formblatt PCT/RO/101 (beigefügt)
Designation of contracting states : See Form PCT/RO/101 (enclosed)
Désignation d'états contractants : Voir Formulaire PCT/RO/101 (ci-joint)

PCT REQUEST

WO 30729

Original (for **SUBMISSION**) - printed on 18.06.2001 04:28:36 PM

V	Designation of States	
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AP: GH GM KE LS MW MZ SD SL SZ TZ UG ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT EP: AT BE CH&LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR and any other State which is a Contracting State of the European Patent Convention and of the PCT OA: BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT
V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH&LI CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW CO EC
V-5	**Precautionary Designation Statement** In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.	
V-6	**Exclusion(s) from precautionary designations**	NONE
VI	**Priority claim**	NONE
VII-1	**International Searching Authority Chosen**	European Patent Office (EPO) (ISA/EP)

VIII	Check list	number of sheets	electronic file(s) attached
VIII-1	Request	4	-
VIII-2	Description	14	-
VIII-3	Claims	4	-
VIII-4	Abstract	1	EZABST00.TXT
VIII-5	Drawings	1	-
VIII-7	TOTAL	24	

Title of the Invention

Roaming from IMS Domain to the CS Domain

Field of the Invention

The present invention relates to a method of routing a terminated call to a subscriber from an Internet protocol based domain to a circuit switched domain.

Background of the Invention

With the increasing extension of the Internet Protocol (IP) to all communication fields including telephony and particularly mobile telephony, not only a large amount of networking of different systems becomes possible, but also demands occur to provide for a smooth user handling between all accessible communication systems. However, the accessible communication systems also include non-IP related communication systems, for example circuit switched (CS) domains as the GSM network.

Hence, the problem is present that a user may be subscriber to an Internet Protocol Multimedia System (IMS) domain as well as to a CS domain. Thus, such users wish to roam between the domains he subscribes to. Several specific technical problems are connected therewith from which the present invention is directed to the problem of routing terminated calls from the IMS side to the CS side.

Summary of the Invention

Therefore, it is an object of the present invention to provide a simple and efficient method of enabling roaming

from an Internet Protocol based domain to a circuit switched domain.

According to the present invention, this object is solved by providing a method of routing a terminated call to a subscriber from an Internet Protocol based domain to a circuit switched domain, wherein said Internet Protocol based domain has call state control functionalities implemented, said method comprising the steps of receiving an invitation of said subscriber for a call by at least one call state control functionality within said Internet Protocol based domain; returning an indication from a serving means for home subscriber within said Internet Protocol based domain that said subscriber is not registered within said Internet Protocol based domain; obtaining the profile of said subscriber from said home subscriber serving means to a call state control functionality; requesting further routing information from said home subscriber serving means by said call state control functionality; requesting a switching means within said circuit switched domain currently visited by said subscriber for said roaming number by said home subscriber serving means; returning said roaming number of said subscriber to said home subscriber serving means by said visited switching means; returning said roaming number as said further routing information from said home subscriber serving means to said call state control functionality; and establishing said call via gateway means for connecting said domains as well as via said visited switching means to said subscriber.

With the method according to the present invention, an IMS subscriber with a subscription providing access to one or more domains is allowed to roam from an Internet

Protocol based domain to a circuit switched domain in a simple and efficient way. The CS domain functionalities can remain unchanged as contribution to the interworking between the Internet Protocol based domain and the CS domain. Further, with the method according to the present invention, the call can be kept longer in the IP based domain side which is in turn connected with several other advantages.

While the method according to the present invention is not bounded to any particular implementation of a call state control functionality, an option can be considered where said call state control functionality is implemented into two entities.

Accordingly, as an option of the method according to the present invention, subsequent to the receipt of said invitation, a step of requesting the location of said subscriber from said home subscriber serving means is performed; and subsequent to said return of an indication, a step of inviting another call state control functionality for said call is performed, wherein said other call state control functionality performs all subsequent steps mentioned in claim 1 as related to said call state control functionality.

Regarding said home subscriber serving means, the present invention is not limited to a particular architecture of the IMS domain with respect to that. For example, a home location registering means can be external to said home subscriber serving means. Thus, a new interface and also a new functionality would have to be introduced between said home subscriber serving means and said external home location registering means. Some properties of this interface would be to facilitate the roaming number

inquiry by the home subscriber serving means, to provide a different inquiry for the request of said further routing information, because CS domain service are overridden in the home location registering means, and to be accessible from other elements than said home subscriber serving means which means that said routing number inquiry may be started from other entities.

However, the method according to the present invention can be readily brought into coincidence with a home subscriber serving means which is a combination of a mobility serving means (IP multimedia functionality) of the IP based domain with a home location registering means (subset of HLR functionality) of the CS based domain.

Accordingly, in the method according to the present invention, if an IP multimedia functionality and a subset of home location registering functionality are integrated into said home subscriber serving means, then said registering request, if applicable, and return is performed with said IP multimedia part; said profile request and download is performed with said IP multimedia part; said roaming number provision requesting step as executed to said home subscriber serving means is performed with said IP multimedia part; subsequent thereto, a step of requesting said home location registering part for the provision of the roaming number of said subscriber is performed by said IP multimedia part; said roaming number provision requesting step as executed to said visited switching means is performed with said home location registering part; said roaming number returning step as executed by said visited switching means is performed with said home location registering part; subsequent thereto, a step of returning

said roaming number from said home location registering part to said IP multimedia part within said home subscriber serving means is performed; and said roaming number returning step as executed to said serving call state control functionality is performed by said IP multimedia part.

In the present field which is still under development, it may be necessary or desirable that certain terminating call related service functions are overridden.

Hence, as further modification of the method according to the present invention, the step of requesting further routing information from said home subscriber serving means can involve the overriding of at least one terminating call related service functionality within said home subscriber serving means.

As further solution of the present object, according to the present invention a serving call state control functionality device for providing a routing service to a circuit switched domain is provided, said serving call state control functionality device providing a functionality of an Internet Protocol based domain and comprising means which are adapted to perform related steps of the method according to the present invention or modifications thereof.

Thus, services of the Internet Protocol based domain can be provided for the roaming subscriber (to the Internet Protocol based domain) within this serving call state control functionality device. Additionally, there can be some services, e.g. roaming leg charging which are provided in the S-CSCF (by IMS service). In other words, although the services are IMS services, they can have CS

flavor, because the roaming service needs to take CS aspects into account.

The present invention will become more apparent from the following detailed description of the preferred embodiments when taken in conjunction with the accompanying drawings.

Brief Description of the Drawings

Fig. 1 shows a circuit switched routing service of a serving call state control functionality of an Internet Protocol based domain under consideration of a solution having a home subscriber serving means as an implementation of the method according to the present invention.

Description of the preferred embodiments

As mentioned above, the present invention aims to provide the possibility of routing a terminated call from an Internet Protocol based domain such as the Internet Protocol Multimedia System IMS to a circuit switched domain CS such as the GSM network. This is necessary in a situation when a user is subscriber in both the IMS domain and the CS domain, and a call is terminated to the user, for example, while being unregistered in the IMS side.

This situation is depicted in fig. 1 where the subscriber is invited for a call in a step S1 at an interrogating call state control function I-CSCF of the IMS domain. The elements at the left hand side of the dotted line in fig. 1 are part of the IMS domain while the right hand side constitutes the CS domain. In step S2, the I-CSCF

requests the location of the called subscriber from the home subscriber server HSS.

Here, description is made with respect to the functionalities related to a call state control functionality (CSCF) being divided into an interrogating CSCF and a serving CSCF. However, the present invention is not limited thereto, these functionalities can also be implemented in only one entity or in more than two.

Here, as one option of the present invention, a home subscriber server HSS is considered where this HSS comprises the subset of the HLR functionality to support roaming to GSM/UMTS CS domain networks and the IP multimedia functionality. In this case, these parts of the home subscriber server do have an internal interface over which they communicate. As other options, the home subscriber server can be of any other kind (e.g. a single entity) or even be replaced by any entity acting equivalently.

The present invention is not directed to this home subscriber server HSS as such, for which reason a detailed description thereof or of its elements is omitted. However, the present invention can advantageously make use of it, although being not bound thereto, i.e. the structure of the home subscriber server HSS is no essential prerequisite for the present invention.

Anyway, the following description is given by considering the home subscriber server having an IP multimedia functionality interfaced to a subset of HLR functionality.

That is, the above mentioned step S2 is directed to the IP multimedia functionality of the home subscriber server HSS and, in a step S3, this part returns the information to the interrogating call state control function I-CSCF that the subscriber is presently not registered in the IMS domain.

Next, the interrogating call state control function I-CSCF invites a serving call state control function S-CSCF which supports terminated sessions for unregistered subscriber by default. This constitutes step S4.

As the serving call state control functionality S-CSCF needs the subscriber's user profile, it initiates a respective download by a request to the IP multimedia functionality within the HSS. These actions correspond to steps S5 and S6, respectively.

As one embodiment of the present invention, messages for indication returning (step S3) and profile obtaining (step S5) are implemented as a single message.

However, also in this case steps S3 and S5 can still be perceived as logically separate, since the receiving of said indication and the obtaining of the profile are two independent functions.

In the method of the present invention according to fig. 1, thereafter, the serving call state control function S-CSCF initiates a routing service to the circuit switched domain, starting with step S7 in which further routing information is requested from the IP multimedia functionality within the HSS. Within the HSS the functionality responsible for the IP Multimedia (IM)

contacts the home location register part of the HSS in a step S8, to formulate the roaming number query.

Then, a query to provide the roaming number of the subscriber as the above mentioned further routing information is performed. That is, the mobile services switching center VMSC of the circuit switched domain which the subscriber currently visits is requested for the roaming number, constituting step S9. In response thereto, a step S10 is performed where the visited mobile services switching center VMSC returns the roaming number back to the home location register HLR. The home location register HLR part of the HSS, in turn, returns the roaming number in a step S11 to the functionality handling the IM which executes step S12, returning this roaming number back to the serving call state control function S-CSCF.

Having the roaming number, the serving call state control function S-CSCF can continue the call routing on the basis of this information. This means that the call is finally established via the breakout gateway control function BGCF, the media gateway control function MGCF, the signaling gateway function SGW, and the visited mobile services switching center VMSC to the terminal of the subscriber. This is indicated by steps S131-S134.

The query for obtaining the roaming number from the visited mobile services switching center VMSC corresponding to steps S9 and S10 can be performed by exchanging messages "Provide Roaming Number" and "Provide Roaming Number acknowledgement", respectively.

The query requesting the further routing information which corresponds to steps S7 and S12 can be performed by

exchanging messages "Cx_Location_query" and "Cx_Location_query_Resp", respectively. These messages are then part of the Cx-interface.

Thus, as the requested further information, the serving call state control function S-CSCF can obtain a "Mobile Station Roaming Number" MSRN.

Generally speaking, while it is possible with the present invention that the IMS services are provided within the serving call state control function S-CSCF for the roaming IMS subscriber, it may be that it is unwanted that services of the CS domain are introduced to the serving call state control function S-CSCF. Hence, it is an option that services of said home location register HLR related to said CS domain are overridden by said CS routing service of the serving call state control function S-CSCF.

The services of said home location register related to CS domain are hereafter referred to as the CS services. The CS services overridden in the method of this invention are typically the ones related to terminating calls.

The terminating call CS service functionalities would typically be invoked when the routing information is requested from the home location register, or in this case from the HSS (S7). The invocation means that as the routing information request arrives to the home location register, it starts to process the functionalities for the CS services. These services typically include incoming call barring, closed user group (CUG) and call forwarding - especially call forwarding unconditional (CFU) and the terminating call Camel services (CAMEL: customized applications for mobile networks enhanced

logic).

For instance, the functionalities that must be overridden are the ones that would hinder the routing of the terminating call leg directly to the subscriber in the CS domain such as call forwarding or incoming call barring. Similarly, the functionalities that must be overridden include the ones that would indicate service invocation requests to the HSS/HLR inquiring node, which is normally a circuit switched gateway MSC, however, in this case the S-CSCF. These service invocation requests would typically be such that their fulfillment requires such service functionalities in the S-CSCF that are unnecessary for the simple routing of a terminating call leg to the CS side for the subscriber. The terminating call leg from the S-CSCF to the VMSC can be seen as a direct pipe not involving supplementary services that would affect call routing. The service functionalities in the S-CSCF that are unnecessary for the simple routing of a terminating call leg include for instance the Camel gsmSSF functionalities for the GMSC or the IMSC (the one inquiring the HLR normally). Therefore, no Camel service information (CSI, T-CSI) are returned from the HSS and no triggering to the CSE from the S-CSCF is required during the course of the CS terminating call leg set-up from the S-CSCF to the VMSC.

Furthermore, in the case of call forwarding unconditional, the service functionality would obtain the forwarded-to number from the subscriber database and return it in routing information request response, instead of sending the provide roaming number request to the VMSC/VLR. In the case of terminating call Camel functionalities, the service functionality would return

the terminating Camel service information (T-CSI) obtained from subscriber database in the routing information request response. The T-CSI would then be processed by the inquiring node i.e. GMSC or S-CSCF to send an inquiry to the Camel service environment (CSE). The service logic for terminating call Camel services would then be executed in the Camel service environment (CSE).

Especially the performing of the inquiry to the Camel service environment would be a problem for the S-CSCF, since the terminal call IP multimedia services belong to its responsibility. These services may be overlapping with the terminating CS services.

In the preferred embodiments of this invention, the service functionalities for the terminating call CS services are not started in the HSS when it is detected by the HSS that the routing information request (S7) is from a S-CSCF and/or relating to terminating call routing towards CS side for a dual subscription subscriber. For instance, this can be detected by inspecting the source address of the routing information request message. Alternatively, there can be a dedicated message for the routing information request for the purpose of the overriding of the service functionalities for the terminating call CS services. Similarly, an indicator in a routing information request message can be used.

What is presently considered as the best mode for implementing the present invention is an embodiment using the home subscriber server HSS with the Provide Roaming Number query being performed with messages as described. In addition, it is presently considered to be not desired that services of the CS domain are introduced to the

serving call state control function S-CSCF. Hence, a fully compatibility to the existing standards e.g. or GSM/UMTS/3GGP at the time of the present invention is aimed. However, depending on the implementation, some "flavor" of CS services may need to be included into the CS routing service. Anyway, the services in HLR should be overridden and all services are executed in the serving CSCF.

What is described before is a method of routing a terminated call to a subscriber from an Internet Protocol based domain to a circuit switched domain, wherein said Internet Protocol based domain has call state control functionalities implemented, said method comprising the steps of receiving an invitation of said subscriber for a call by at least one call state control functionality within said Internet Protocol based domain; returning an indication from a serving means for home subscriber within said Internet Protocol based domain that said subscriber is not registered within said Internet Protocol based domain; obtaining the profile of said subscriber from said home subscriber serving means to a call state control functionality; requesting further routing information from said home subscriber serving means by said call state control functionality; requesting a switching means within said circuit switched domain currently visited by said subscriber for said roaming number by said home subscriber serving means; returning said roaming number of said subscriber to said home subscriber serving means by said visited switching means; returning said roaming number as said further routing information from said home subscriber serving means to said call state control functionality; and establishing said call via gateway means for connecting

said domains as well as via said visited switching means to said subscriber.

As is understood from the present description by those who are skilled in the art, the present invention can be applied to many technical fields, and changes and modifications may be effected to the presently preferred embodiments without departing from the scope of the appended claims.

Claims

1. A method of routing a terminated call to a subscriber from an Internet Protocol based domain (**IMS**) to a circuit switched domain (**CS**), wherein said Internet Protocol based domain (**IMS**) has call state control functionalities implemented,

said method comprising the steps of

receiving an invitation (**S1**) of said subscriber for a call by at least one call state control functionality within said Internet Protocol based domain (**IMS**);

returning (**S3**) an indication from a serving means (**HSS**) for home subscriber within said Internet Protocol based domain (**IMS**) that said subscriber is not registered within said Internet Protocol based domain (**IMS**);

obtaining (**S5**) the profile of said subscriber from said home subscriber serving means (**HSS**) to a call state control functionality (**S-CSCF**);

requesting (**S7**) further routing information from said home subscriber serving means (**HSS**) by said call state control functionality;

requesting (**S9**) a switching means (**VMSC**) within said circuit switched domain (**CS**) currently visited by said subscriber for said roaming number by said home subscriber serving means (**HSS**);

returning (**S10**) said roaming number of said subscriber to said home subscriber serving means (**HSS**) by said visited switching means (**VMSC**);

returning (**S12**) said roaming number as said further routing information from said home subscriber serving means (**HSS**) to said call state control functionality (**S-CSCF**); and

establishing (**S131-S133**) said call via gateway means (**BGCF, MGCF**) for connecting said domains (**IMS, CS**) as

well as via said visited switching means (**VMSC**) to said subscriber.

2. A method of routing a terminated call to a subscriber according to claim 1, wherein

subsequent to the receipt of said invitation (**S1**), a step of requesting (**S2**) the location of said subscriber from said home subscriber serving means (**HSS**) is performed; and

subsequent to said return of an indication (**S3**), a step of inviting (**S4**) another call state control functionality (**S-CSCF**) for said call is performed, wherein said other call state control functionality (**S-CSCF**) performs all subsequent steps mentioned in claim 1 as related to said call state control functionality.

3. A method of routing a terminated call to a subscriber according to claim 1 or 2, wherein an IP multimedia functionality and a subset of home location registering functionality are integrated into said home subscriber serving means (**HSS**), and

said registering request (**S2**), if applicable, and return (**S3**) is performed with said IP multimedia part;

said profile request (**S5**) and download (**S6**) is performed with said IP multimedia part;

said roaming number provision requesting step (**S7**) as executed to said home subscriber serving means (**HSS**) is performed with said IP multimedia part;

subsequent thereto, a step (**S8**) of requesting said home location registering part for the provision of the roaming number of said subscriber is performed by said IP multimedia part;

said roaming number provision requesting step (**S9**) as executed to said visited switching means is performed with said home location registering part;

said roaming number returning step (**S10**) as executed by said visited switching means (**VMSC**), is performed with said home location registering part;

subsequent thereto, a step of returning (**S11**) said roaming number from said home location registering part to said IP multimedia part within said home subscriber serving means (**HSS**) is performed; and

said roaming number returning step (**S12**) as executed to said serving call state control functionality (**S-CSCF**) is performed by said IP multimedia part.

4. A method of routing a terminated call to a subscriber according to claim 1, wherein the step of requesting (**S7**) further routing information from said home subscriber serving means (**HSS**) involves the overriding of at least one terminating call related service functionality within said home subscriber serving means (**HSS**).

5. A method of routing a terminated call to a subscriber according to claim 4, wherein the terminating call related service functionality is a supplementary service functionality.

6. A method of routing a terminated call to a subscriber according to claim 4, wherein the terminating call related service functionality is an intelligent network trigger information related functionality.

7. A method of routing a terminated call to a subscriber according to claim 1, wherein

said step of requesting (**S7**) further routing information is performed by submitting a Send Routing Information message;

said step of requesting (**S9**) the provision of the roaming number of said subscriber are performed by

submitting a Provide Roaming Number message;

said step of returning (**S10**) said roaming number of said subscriber is performed by submitting a Provide Roaming Number acknowledgement message; and

said step of returning (**S12**) said roaming number as said further routing information is performed by submitting a Send Routing Information acknowledgement message.

8. A serving call state control functionality device for providing a routing service to a circuit switched domain (**CS**), said serving call state control functionality (**S-CSCF**) device providing a functionality of an Internet Protocol based domain (**IMS**) and comprising means which are adapted to perform related steps of any one of the methods according to claims 1-5.

Abstract

A method of routing a terminated call to a subscriber from an Internet Protocol based domain (**IMS**) to a circuit switched domain (**CS**), wherein said Internet Protocol based domain (**IMS**) has call state control functionalities implemented, said method comprising the steps of receiving an invitation (**S1**) of said subscriber for a call by at least one call state control functionality within said Internet Protocol based domain (**IMS**); returning (**S3**) an indication from a serving means (**HSS**) for home subscriber within said Internet Protocol based domain (**IMS**) that said subscriber is not registered within said Internet Protocol based domain (**IMS**); obtaining (**S5**) the profile of said subscriber from said home subscriber serving means (**HSS**) to a call state control functionality (**S-CSCF**); requesting (**S7**) further routing information from said home subscriber serving means (**HSS**) by said call state control functionality; requesting (**S9**) a switching means (**VMSC**) within said circuit switched domain (**CS**) currently visited by said subscriber for said roaming number by said home subscriber serving means (**HSS**); returning (**S10**) said roaming number of said subscriber to said home subscriber serving means (**HSS**) by said visited switching means (**VMSC**); returning (**S12**) said roaming number as said further routing information from said home subscriber serving means (**HSS**) to said call state control functionality (**S-CSCF**); and establishing (**S131-S133**) said call via gateway means (**BGCF, MGCF**) for connecting said domains (**IMS, CS**) as well as via said visited switching means (**VMSC**) to said subscriber.

(Fig. 1)

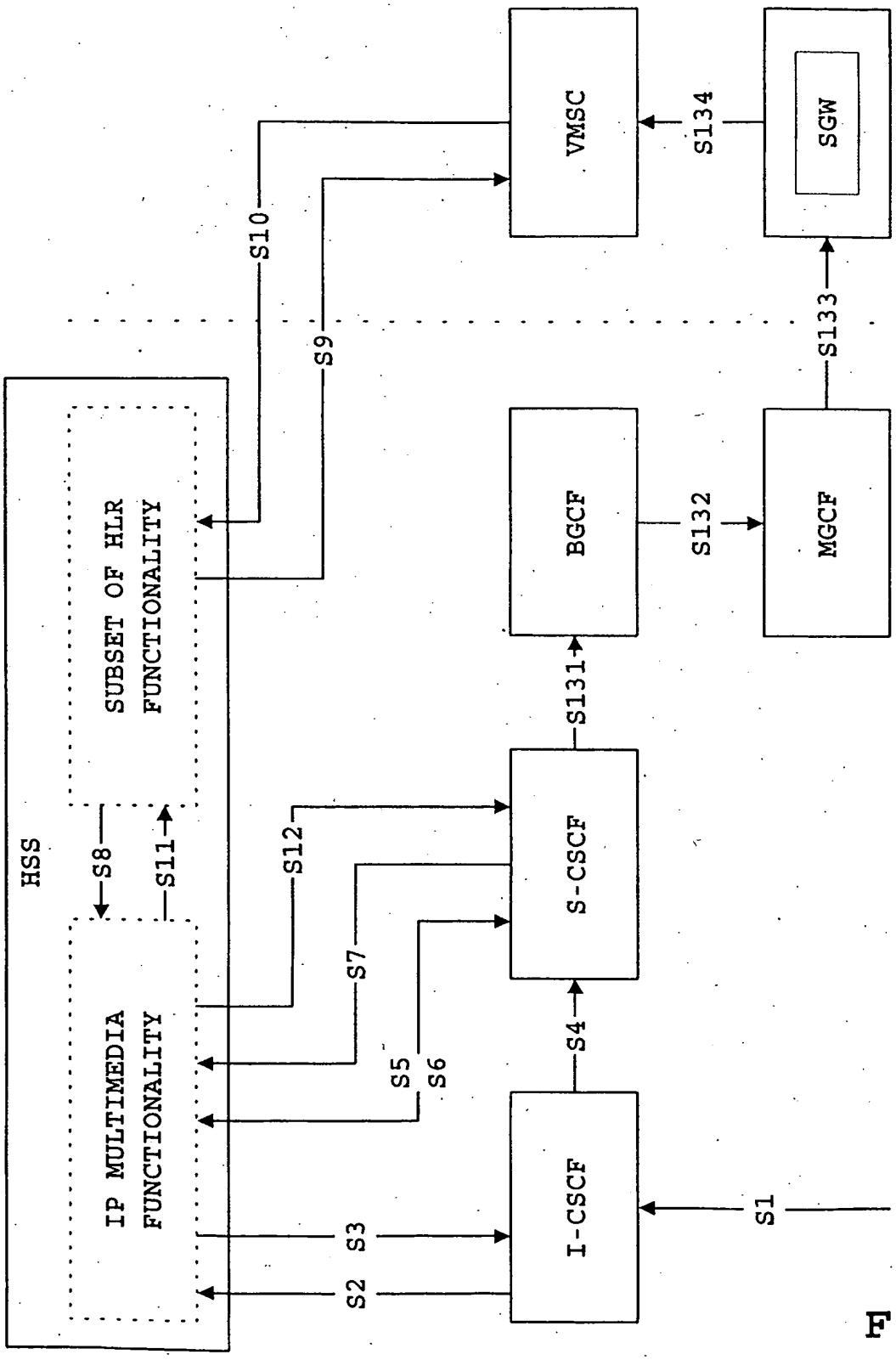
HSS
SUBSET OF HLR FUNCTIONALITY
IP MULTIMEDIA FUNCTIONALITY
S8
S11
S10
S9
S12
S7
S5
S6
S3
S2
S4
S131
S132
S133
S134
S1
VMSC
SGW
BGCF
MGCF
S-CSCF
I-CSCF

FIG. 1